



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

*Handwritten mark*

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/699,789	11/04/2003	Gary A. Kneezel	115005	4009
25944	7590	02/10/2006		
OLIFF & BERRIDGE, PLC P.O. BOX 19928 ALEXANDRIA, VA 22320			EXAMINER STEPHENS, JUANITA DIONNE	
			ART UNIT 2853	PAPER NUMBER

DATE MAILED: 02/10/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/699,789

Applicant(s)

KNEEZEL, GARY A.

Examiner

Juanita D. Stephens

Art Unit

2853

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on Amendment filed 11/22/2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 15-20 and 23-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 15-20 and 23-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 November 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

### DETAILED ACTION

Claims 1-14, and 21-22 are canceled.

The interview record filed 1/19/2006 is OK.

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 15-19 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 60-259456.

JP 60-259456 discloses a fluid ejector (ink jet head) (Fig. 2) comprising: 1) channels formed in at least one of a first wafer(plate 2a), a second wafer (plate 2b) and zero, one or more intermediate layers (plate 1) , 2) at least one cross-trench (tier difference I) formed in at least one of the first and second wafers at the zero, one or more intermediate layers that intersects the channels to form orifices (nozzles 1a and 1b) for the channels (as seen in Figs. 1a and 2), wherein the combination of the first and second wafers on the zero, one or more intermediate layers form a wafer structure containing a plurality of fluid ejector devices (Abstract), 3) front faces formed for the fluid devices by at least dicing into the cross-trenches such that the orifices are offset from the front faces, one of the front faces formed above the at least one cross-trench and another of the front face formed below the at least one cross-trench (Abstract and Figs. 1a and 2), 4) wherein the orifices are set back from the front face formed by dicing (as

Art Unit: 2853

seen in Figs. 1a and 2), 5) wherein the orifices extend in front of the surface formed by dicing (as seen in Figs. 1a and 2), 6) wherein the cross-trench is formed by reactive ion etching, and 7) wherein front faces are formed for the fluid devices by dicing at least to a depth (tier difference I) the does not extend to the orifices (as seen in Fig . 2). With respect to claims 15-19, the limitation that the orifices and front faces are formed by dicing, and the cross-trench is formed by reactive ion etching is not seen to patentably limiting because determination of patentability is based on the product itself. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964,966 (Fed. Cir.1985).

3. Claims 20, 23, and 26 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 63-242645.

JP 63-242645 discloses a fluid ejector device (ink jet recording head) (Fig. 6), comprising: 1) a heater wafer (substrate 1), 2) a polymer layer (liquid path wall 2), 3) a channel wafer (covering board 3) 4) at least one cross trench (formed by floor 24) formed in at least one of the heater wafer (col 6, lns 42-47), the polymer layer, and the channel wafer, wherein the channel wafer is over the polymer layer and the polymer layer is over the heater wafer to form a bonded structure (Abstract), 5) a front face formed by dicing at least into the at least one cross-trench of the bonded structure, the front face comprising the orifices (delivery port 4) (as seen in Figs. 5, 6 and 8), 6) wherein the at least one cross-trench is formed by reactive ion etching, and 7) wherein the front face is formed for the fluid devices by dicing to a depth that does not extend to the orifices (as seen in Figs. 5, 6, and 8). With respect to claims 20, 23, and 26, the limitation that the orifices and front faces are formed by dicing, and the cross-

trench is formed by reactive ion etching is not seen to patentably limiting because determination of patentability is based on the product itself. In re Thorpe, 777 F.2d 695, 698, 227 USPQ 964,966 (Fed. Cir.1985).

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 63-242645 in view of JP 63-290755.

JP 63-242645 teaches the claimed invention, with the exception of wherein the channel is flared near the orifice. JP 63-290755 at least teaches wherein the channel (liquid path 7) is flared near the orifice (as seen in Fig. 3C). It would have been obvious at the time the invention was made to a person having ordinary skill in the ink jet art to modify JP 63-242645 by flaring the channel near to orifice for the purpose of providing high quality recording.

6. Claim 25 is rejected under 35 U.S.C. 103(a) as being unpatentable over JP 63-242645 in view of Hirasawa (US 4,897,674).

JP 63-242645 teaches the claimed invention, with the exception of wherein the channel is tapered near the orifice. Hirasawa at least teaches wherein the channel is tapered near the orifice. It would have been obvious at the time the invention was made

to a person having ordinary skill in the ink jet art to modify JP 63-242645 by tapering the channel near to orifice for the purpose of easily refilling the channel within a short time.

***Response to Arguments***

7. Applicant's arguments with respect to claim 15-20, and 23-26 have been considered but are moot in view of the new ground(s) of rejection.

***Conclusion***

8. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

***Comments***

9. **PALM indicates that there was an Information Disclosure Statement filed 11/4/2003, however, a copy of this IDS is not on file and has not been signed by the Examiner. Please submit a copy of the IDS in next response.**

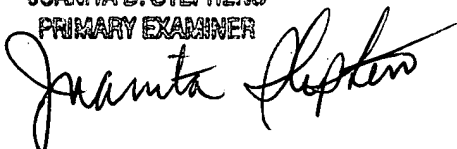
**Contact Information**

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Juanita D. Stephens whose telephone number is (571) 272-2153. The examiner can normally be reached on Flex.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen Meier can be reached on (571) 272-2149. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

JUANITA D. STEPHENS  
PRIMARY EXAMINER



JDS

February 6, 2006

Juanita D. Stephens  
Primary Examiner  
Art Unit 2853